



*Non-Contact Absolute Position Transducer*

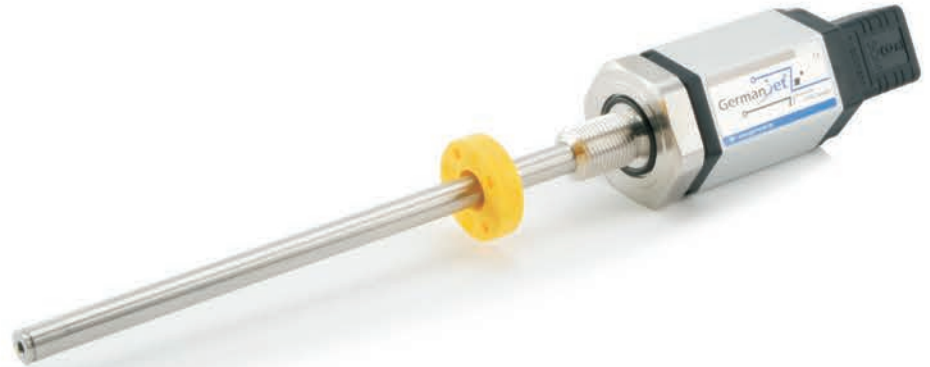
Leading technology revolutionary determine who will hold the competitive advantage today and tomorrow.

**ABSOPOS SERIES**

**Germanjet®**  
PART OF YOUR POSITIONING

The 17 series non-contact absolute position transducer is specially designed for hydraulic cylinder to provide precise, direct and absolute position feedback. Hydraulic body is made by stainless steel; it can be inserted directly into hydraulic cylinder. Electronic component and hydraulic body are modular design which can be detached easily.

The transducer is rated for IP65 which offers full protection against outside agents for use in harsh environments with high contamination and presence of dust. The connector is common for use in hydraulic device and easy for field connection. Besides for hydraulic system, it is also suitable for machine installation. The absence of electrical contact eliminates all wear and guarantees almost unlimited mechanical life expectancy.

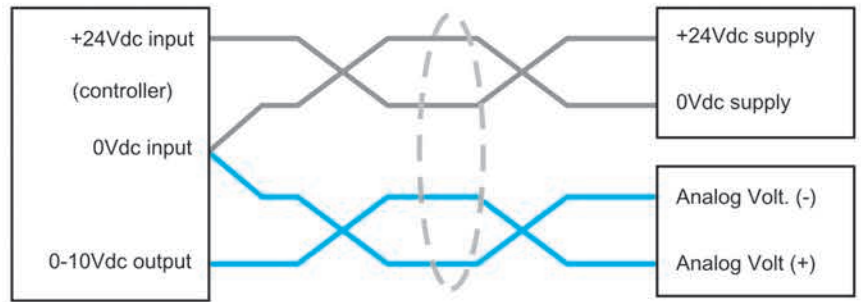
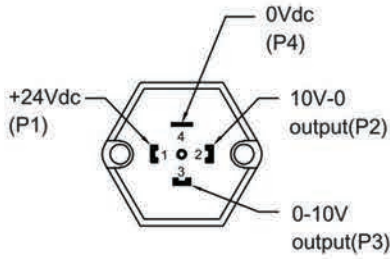


#### Specifications

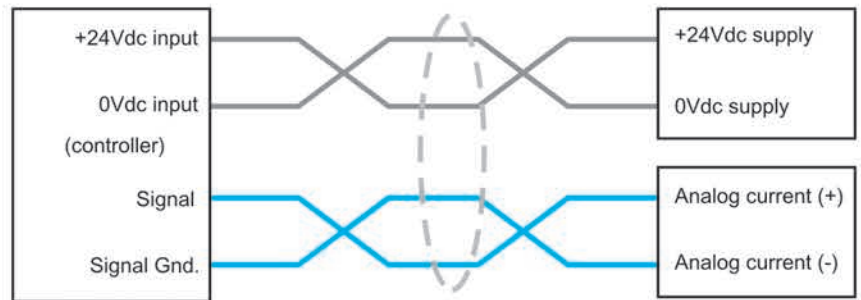
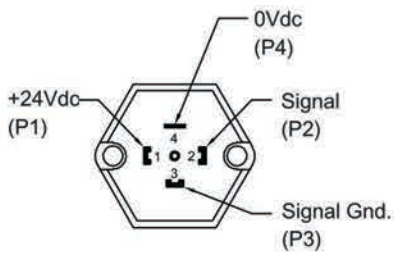
Order Code	170	171	172	174	175
Output	0 - 10 V 10 - 0 V	0 - 20 mA	20 - 0 mA	4 - 20 mA	20 - 4 mA
Measurement Type	Linear displacement				
Resolution	Infinite, restricted by output ripple				
Input Voltage	+24Vdc (20.4 - 28.8Vdc)				
Input Protection	Polarity protection up to -30Vdc, Over voltage protection up to 36Vdc				
Current Consumption	50-140mA (stroke range dependent)				
Dielectric Strength	500Vdc (DC ground to machine ground)				
Repeatability	< ±0.005% of full scale				
Non-Linearity	< ±0.01% of full scale (minimum ±90µm)				
Update Time	0.5 ms up to 1200 mm / 1.0 ms up to 2400 mm 2.0 ms up to 4800 mm / 5.0 ms up to 7600 mm				
Operation Temp.	-40 to 75°C, Humidity 90% non-condensing				
Sealing	IP65 / IP67 (with connector)				
Vibration Rating	15g / 10-2000Hz / IEC standard 68-2-6				
Shock Rating	100g single hit per IEC standard 68-2-27				
EMC	Emission EN 61000-6-3, Immunity EN 61000-6-2 EN 61000-4-2/3/4/6				
Pressure Rating	350 bar / 600 bar peak				
Mounting	M18 x 1.5				
Housing Material	Anodized aluminum sensor cartridge Stainless steel tube and flange				



Analog voltage output



Analog current output



Order Code

1 7 X X X X X X X X

Output

- 0 = 0-10Vdc and 10-0Vdc
- 1 = 0-20 mA
- 2 = 20-0 mA
- 4 = 4-20 mA
- 5 = 20-4 mA

Connector

- 0 = 4 pins connector ( IP65)
- 3 = 4 pins connector ( IP67)
- 8 = Cable outlet (P.A4 to select cable length)
- 9 = D60 armor sensor cartridge

Mounting thread

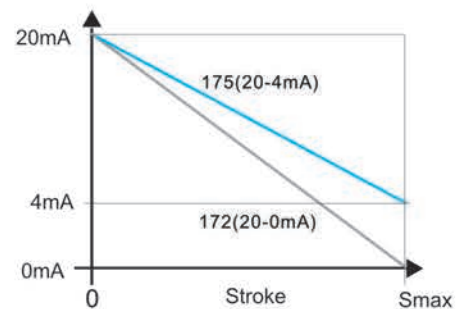
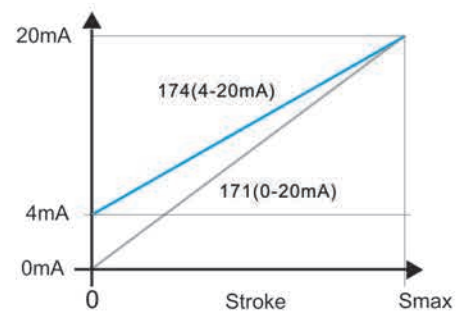
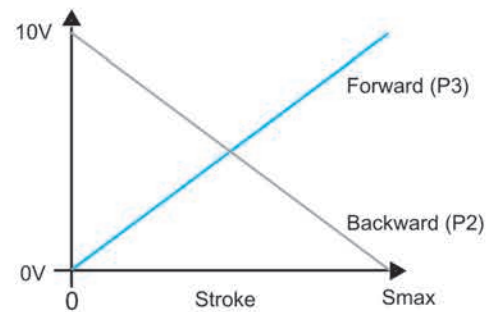
- 2 = M18 x 1.5

Magnet Type

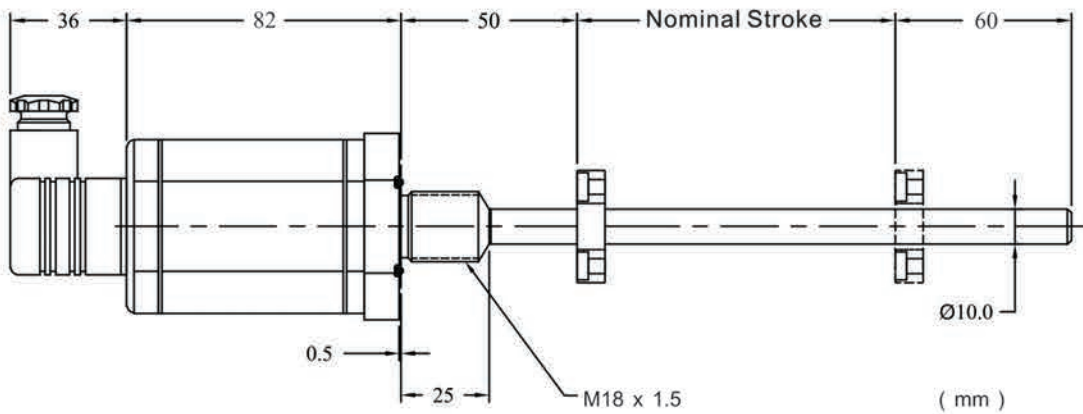
- 1 = Dia. 33mm ring
- 2 = Dia. 25mm ring
- 3 = Floating ball

Stroke Length

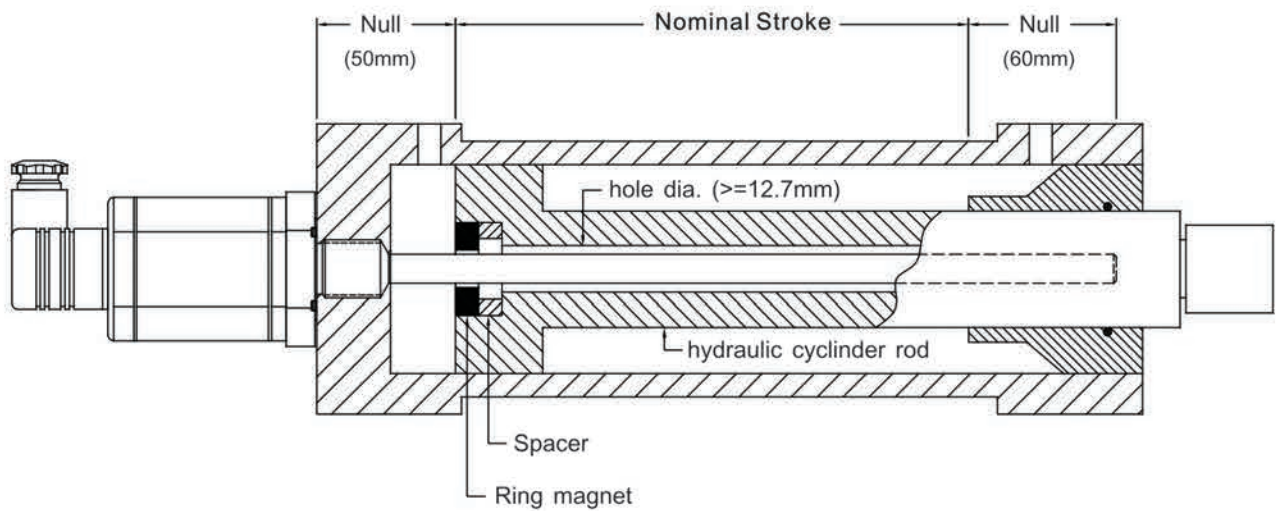
0 0 7 5 , 0 1 0 0 , 0 1 2 5 , 0 1 5 0 , 0 1 7 5 , 0 2 0 0 , 0 2 2 5  
 0 2 5 0 , 0 2 7 5 , 0 3 0 0 , 0 3 2 5 , 0 3 5 0 , 0 3 7 5 , 0 4 0 0  
 0 4 2 5 , 0 4 5 0 , 0 4 7 5 , 0 5 0 0 (25mm increment after)



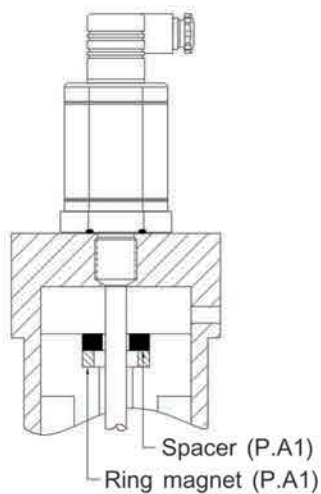
Dimension



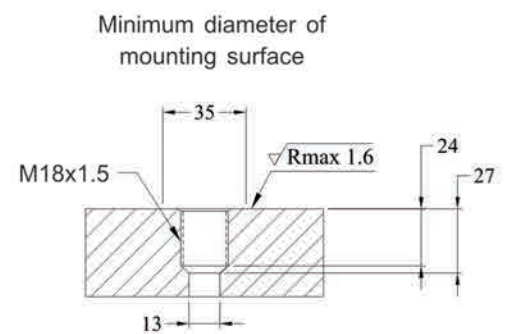
Installation



Magnet installation



Mounting surface requirement



Installation hole must be perpendicular with mounting surface and center with sensor rod.

Remarks:

Mounting screw must be made of non-magnetizable materials. If cylinder is made of magnetizable materials, ring spacer must be installed

## Sensor Cartridge Replacment



The sensor cartridge can be removed from the flange while still installed in the cylinder. This allows quick sensor cartridge replacement without the loss of hydraulic pressure.

Non-contact technology ...



Discription

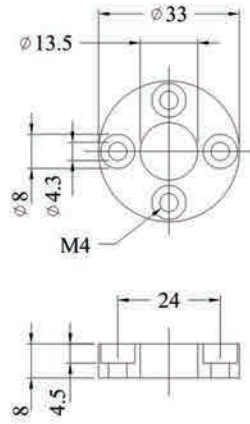
For series

Order Code

Dia. 33mm ring

12/17/19 Series

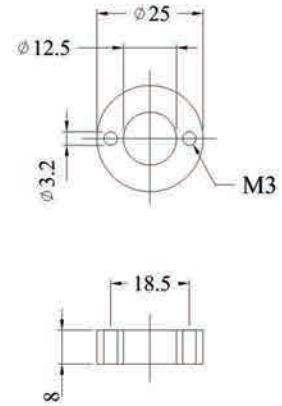
1700 951 001



Dia. 25mm ring

12/17/19 Series

1700 951 003



Material

Weight

Plastic

~8g

Plastic

~8g

Discription

Order Code

Material

Dia. 33mm Spacer

1700 951 002

Plastic

Dia. 25mm Spacer

1700 951 004

Plastic

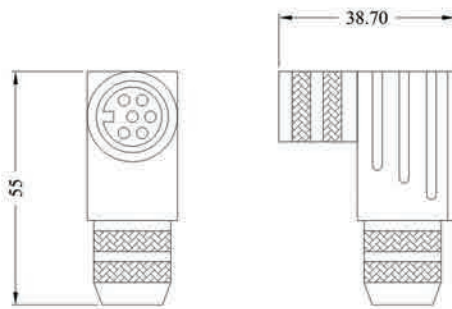
Discription

Model

90Deg. 6/7pin. Connector (female)

D60

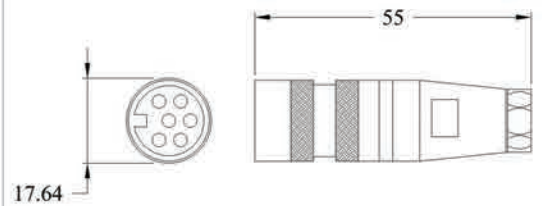
D70



6/7pin. Connector (female)

D60

D70



Order Code

Material

Weight

1800 951 011

1800 951 013

Housing: Zinc nickel platedI

~60g

1800 951 010

1800 951 012

Housing: Zinc nickel platedI

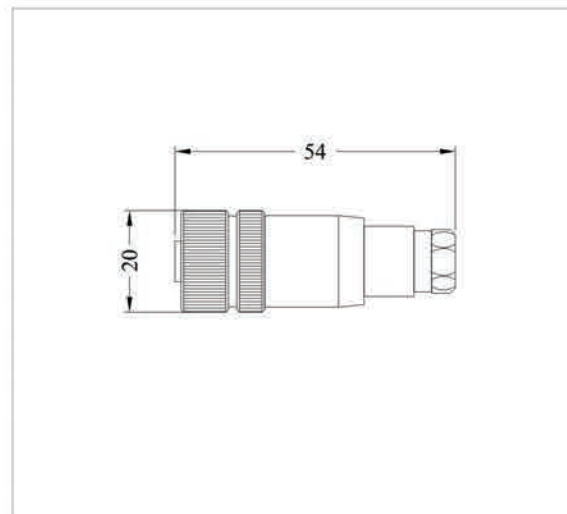
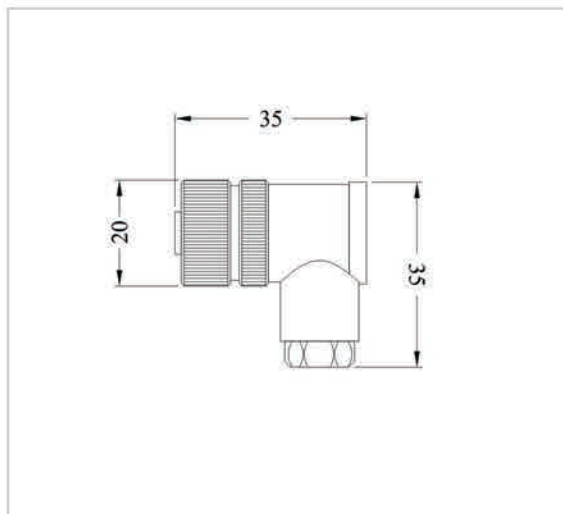
~40g



Discription
Order Code

M12 90Deg 5pins Connector (Female)
1800 951 018

M12 5pins Connector (Female)
1800 951 017



Material
Cable Diameter

Cu Zn / Plastic
6 - 8 m m

Cu Zn / Plastic
6 - 8 m m



Discription	Floating Ball	Floating Ball	Floating Ball	Floating Ball
Order Code	1700 951 005	1700 951 006	1700 951 007	1700 951 008
Material	304 SS	304 SS	304 SS	304 SS
Inside Dia. (ID)	15 mm	23 mm	23 mm	9 mm
Out Dia./Height	52 x 52 mm	75 x 70 mm	125 x 120 mm	28 x 28 mm
Density	0.7	0.7	0.7	0.7
Pressure Rating	40 bar	40 bar	40 bar	40 bar



Discription	Floating Marker	Floating Marker	Floating Marker	Floating Marker
Order Code	1700 951 009	1700 951 010	1700 951 011	1700 951 012
Material	PP Plastic	PP Plastic	PP Plastic	PP Plastic
Inside Dia. (ID)	8 mm	8 mm	9 mm	9 mm
Out Dia./Height	18 x 8 mm	19 x 17 mm	24 x 10 mm	26 x 17 mm
Density	0.7	0.7	0.7	0.7

\* use for special 7mm Stainless Steel tube



Discription	Floating Ball Stopper	Floating Ball Stopper
Order Code	1700 951 013	1700 951 014
Material	304 SS	304 SS
Inside Dia. (ID)	10 mm	7 mm
Out Dia./Height	20 x 13 mm	16 x 13 mm



### 3 Twisted Pairs Cable Order Code

1 8 0 0 9 5 1 1 X X

Cable Length

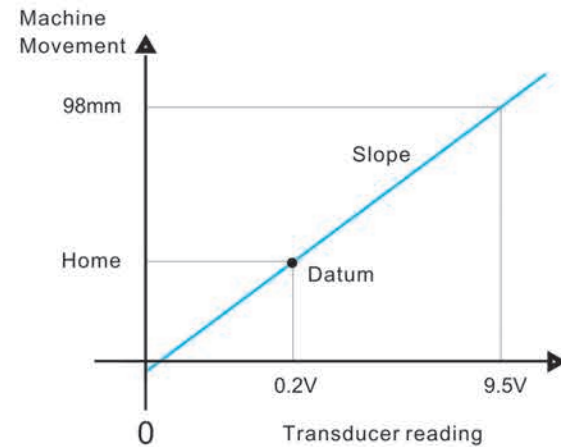
Please select the cable length in unit Meter  
 For example, 01 = 1 Meter  
 (Cable price not include connector)  
 If purchase the connector together, we can install  
 the connector with cable for free of charge.

Color Code	D60	D70	4 Pins Voltage	4 Pins Current
Black	1	1	P3	N.C
White	2	2	P3 Gnd.	N.C
Yellow	3	3	P2	P2
Green	4	4	P2 Gnd.	P2 Gnd.
Red	5	5	P1	P1
Blue	6	6	P4	P4
		7 (N.C)		

## Transducer on machine calibration

To make sure the nominal stroke length is fully covered, all analog position transducers' output signal were calibrated slightly wider than the stroke. After installation, the machine needs to go through calibration. The step is as follow.

- 1) Move the machine to home position and record the transducer reading.  
Example: at home, the transducer reading = 0.2V
- 2) Move the machine away from home position, measure the actual movement and record the transducer reading.  
Example: actual movement = 98mm,  
transducer actual movement reading = 9.5V
- 3) Calculate the "slope"  
Slope = actual movement / (transducer actual movement reading - transducer home reading).  
Example: slope = 98mm / (9.5V - 0.2V) = 10.537
- 4) Calculate the "datum"  
Datum = slope x transducer home reading  
Example: datum = 10.537 x 0.2V = 2.106
- 5) Machine position = (slope x transducer reading) - datum  
Example: machine position = (10.537 x transducer reading) - 2.106



## International Protection Rating (IP)

IP X X

## Solid particle protection

- 4 = >1mm object size protected against
- 5 = Ingress of dust is not entirely prevented, but it must not enter in sufficient quantity to interfere with the satisfactory operation of the equipment;
- 6 = No ingress of dust; complete protection against contact

## Liquid ingress protection

- 0 = Not protected
- 5 = Water projected by a nozzle (6.3mm) against enclosure from any direction shall have no harmful effects.
- 7 = Ingress of water in harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion).



Transducer may in touch with dust and water, having proper IP rating is needed. Potentiometer IP rating is IP 40 or 50 but non-contact position transducer IP rating is IP 65 or even 67.



## Installation of floating magnet



Installation of floating magnet is very simple. Compared to captive magnet, floating magnet can truly demonstrate the advantage of non-contact sensing and eliminate the wear of captive magnet socket.

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